myself, that in this region of the heavens about the remarkable star η Argus, strange clearings up, so to speak, or wanings of nebulous light have taken place, and many stars have come to view, with telescopes far inferior to Herschel's.

"And whether we admit this view or not, one thing is absolutely certain. Under such a material atmosphere we live and make our observations, and we are not yet prepared to say with certainty whether there may not be such changes going on in it as will suffice for a full explanation of the appearance of these small stars, if not of the great changes about η Argus."

NOTES

THE omission of a word in a note last week referring to the medals recently granted by foreign Governments to Englishmen, makes this journal appear to hold the opinion that it is to be desired that the British Government should thus signalise *British* work. Such, however, is most emphatically *not* our opinion. What we do hold is that if foreign Governments reward English work, it would be a graceful act for our Government from time to time to reciprocate such acts of international courtesy and good-will by marking in a similar manner its appreciation of *foreign* work.

IN the *Russian Official Gazette* is an announcement that a diploma of honour has been conferred upon Baron Liebig for the application of his knowledge of theoretical chemistry to practical purposes.

THE morning of Saturday the 21st has been fixed for the final despatch of H.M.S. *Challenger* on her long voyage. Her scientific staff—officers and civilians—are all on board, and the ship is busy from end to end, stowing and arranging her unwonted gear. As might be supposed, every available space is filled with books. Mr. Macmillan has received the thanks of the captain and officers and the civilian scientific staff, through Dr. Wyville Thomson, for a case of about fifty volumes of his newest publications, which he sent down as a parting gift.

PROF. HUXLEY has been elected Lord Rector of the University of Aberdeen, by a considerable majority over the Marquis of Huntly, a satisfactory evidence of the estimation in which eminence in science is held by the younger minds in Scotland.

WE regret to learn that M. Pouchet, of Rouen, celebrated as a leading champion of the doctrine of spontaneous generation, died in Paris on December 6.

THE following are the probable arrangements for the Friday evening meetings at the Royal Institution before Easter, 1873:—Jan. 17, On the Old and New Laboratories at the Royal Institution, by W. Spottiswoode, F.R.S.; Jan. 24, On the Analogies of Physical and Moral Science, by Rev. Prof. T. R. Birks; Jan 31, On the Music of the Future, by E. Dannreuther; Feb. 7, On Old Continents, by Prof. A. C. Ramsay, F.R.S.; Feb. 14, On Recent Progress in Weather Knowledge, by R. H. Scott, F.R.S.; Feb. 21, On Action at a Distance, by Prof. J. Clerk Maxwell, F.R.S.; Feb. 28, On Livingstone's Explorations in Africa, by Sir H. C. Rawlinson, F.R.S.; March 7, On the Temperature of the Sun and the Work of Sunlight, by J. Dewar; March 14, On Steamers for Channel Communication, by E. J. Reed; March 21, On New Alcohols from Flint, by J. Emerson Reynolds; March 28, On the Meaning of Force and Energy, by Prof. W. K. Clifford; April 4, Prof. Tyndall, F.R.S.

NATURAL Science at Rugby is producing its fruits. In the recent examination for honours at Oxford, six men were placed in the first class; and of these, four were educated at Rugby—Messrs. Baynes, Cleminshaw, Longstaff, and Lupton.

DR. HARRY RAINY, Emeritus Professor of Forensic Medicine in the University of Glasgow, has given a donation of 1,500*l.* to the University for the endowment of bursaries, to be competed for by students of Medicine.

DR. JOHN STENHOUSE is at present investigating the higher iodo-derivatives of the orcines.

THE Riberi triennial prize of 20,000 lire (800*l.*) has been awarded to Dr. Guiseppe Corradi, director of the surgical clinic at Florence, for four works on the diseases of genito-urinary organs.

AT the second meeting of the North British Branch of the Pharmaceutical Society of Great Britain Prof. Crum Brown gave an address on the relation of the science of chemistry to the art of pharmacy. He afterwards sketched the career of Scheele, the Swedish chemist and druggist, who had contributed a large list of facts to science.

PROF. FREIRE-MARRECO of Newcastle, and Mr. G. A. Lebour will lecture on January 8, and February 5, 1873, at the Rothbury Reading Room, on Artificial Lighting and on Caverns.

A VERY important paper has been printed by Government, respecting the *Phylloxera vastatrix*, or new Vine Scourge. It commences with a letter from Sir C. Murray, H.M. Ambassador at Lisbon, calling attention to the ravages of the disease; and stating that the Portuguese Government has named a Commission "to examine into the progress of this dangerous evil, and to gather from all quarters, whether scientific or practical (*sic*) suggestions for the best mode of extirpating it." A report follows from Mr. Crawford, H.M. Consul at Oporto, on the scientific aspects of the disease, as well as several others from French authorities, including a very important one addressed to the Minister of Agriculture and Commerce by the Commission instituted for the study of the new disease, M. Dumas, president. The various papers having been referred to Dr. Hooker for him to report upon them, he states that the only really effectual remedy at present discovered, and this can obviously be only very partially applied, and not in the best districts, is flooding the vineyards in winter. He adds "there is reason to believe that on the first symptoms of attack in isolated cases, the prompt destruction of the vine, its burning on the spot, and the subsequent treatment of the soil with some approved insecticide, such as carbolic acid, would be of great importance." Vines of American species appear at present to have enjoyed immunity from its ravages in the Rhone district, but the disease has undoubtedly appeared in this country on vines cultivated under glass.

THE South London Entomological Society, which, though only nine months old, has been extremely successful, held on Thursday evening last, at Dunn's Institute, Newington Causeway, a very interesting exhibition of collections of insects, chiefly British Lepidoptera. The collections were made by the members themselves, all amateurs, and do them the greatest credit. The room was densely crowded, and the exhibition was a great success.

A SOCIETY has been formed under the title of the National Health Society, which is to have for its object to help every man and woman, rich and poor, to know for himself, and to carry out practically around him, the best conditions of healthy living. The steps at present proposed are the holding of monthly meetings for the reading of papers; the establishing of classes for instruction in various branches of sanitary science; the delivery of free popular lectures; and the formation of a reference library and an information office.

A VIGOROUS attempt is being made to establish a Museum, principally in connection with Geology, Mineralogy, and Natural History, at the Giggleswick Grammar School, under the management of Mr. Style. The Settle Cave Exploration Committee have sent for the Museum the collection of fossils and other remains obtained from the Victoria Cave. The collection is of great and increasing scientific value, for the exploration of the cave is still going on under the auspices of the Local Committee and of the British Association for the Advancement of Science.

IN inserting in last week's *Les Mondes* a long and deservedly laudatory article from *Le Français*, on himself and his recently-started "Salle des Progrès," l'Abbé Moigno expresses a fear that he may be compelled to give up the project on which he has so enthusiastically entered, from want of means. We sincerely hope this may not be the sad end of the noble effort made by the Abbé to benefit his fellow-citizens.

THE following is from the *Times*:—"A despatch from Detroit, Michigan, states that on the night of November 25, Prof. Watson, of the Ann Arbor Observatory, discovered a new planet in the constellation Taurus. Its R A. is 65° 25′; D. 19° 34′ N. It shines like a star of the tenth magnitude. Its motion is nearly parallel with the equator."

PROF. PETERS has named the two planets lately discovered by him (Nos. 122 and 123) Gerda and Brunhilda, and communicates to the *American Journal of Science* the elements of their orbits. The orbit of Gerda is remarkable for having both the inclination and eccentricity very small—a coincidence not found in any other known asteroids except in the case of Clytia. The planet No. 124 is now known as Aleste, and at the time of Prof. Peters's communication had the appearance of a star of a little less than the eleventh magnitude.

THE Naples correspondent of the *Times* states that for some time previous to her death Mrs. Somerville was engaged in writing her own life.

WE learn from the *School Board Chronicle* that the Netherlands Association for the promotion of labour and industry has awarded a gold medal to Madame Elise van Calcar, a well-known Dutch authoress, for her solution of the following prize question:—"How should girls be taught and educated so as to enable unmarried women to earn an independent livelihood, and the married to bring prosperity and happiness to their respective families?"

THE *Garden* says that the Royal Botanical Society of Belgium and the Botanical Society of France have just decided to make in common a scientific excursion next spring in the valleys of the Meuse and Scheldt.

THE *British Medical Journal* says a project is on foot to resume the publication of an Hospital gazette in Dublin, containing only original scientific matter. It would be published twice a month, would consist of sixteen pages only, and would be issued at an annual subscription of half-a-guinea.

THE existence of such a Society as the New Zealand Institute reflects the highest credit on our antipodal fellow-subjects, who, in their hard fight to make a home for themselves on the other side of the world, do not neglect the means of furthering their highest interests. The institution is a Government one, and was established under the provisions of the New Zealand Institute Act, 1867, of the General Assembly of that colony. It is the *alma-mater* of all the societies in the colony that are devoted to the promotion of "science, literature, or art." These societies are incorporated or affiliated with it, and include the Otago Institute, the Philosophical Institute of Canterbury, the Auckland Institute, the Wellington Philosophical Society, and the Nelson Association for the Promotion of Science and Industry, representing all the leading provinces of New Zealand. The ordinary membership amounts to 600, and includes all the leading colonists residing in different parts of the several provinces. The Institute possesses a museum, laboratory, and library, which, with the work therein, are so organised and utilised for the benefit of the general public that they constitute in combination an important "Technical College," located at Wellington—a formidable, but, we hope, friendly rival to the recently established "University of Otago," which aims at becoming, among other things, an eminent school of applied science. The college is also the head-quarters of the Government Geological Survey, the chief members of the staff of which are professors to the Technical College, the lectures being of two kinds, general and practical. The former include natural history (zoology and botany, with their relations to physical geography and geology) and the elements of experimental science (physics, chemistry, and mineralogy). The practical is, in the meantime, confined to mineralogy and chemistry. Since the New Zealand Institute was established, in 1867, it has published no less than four bulky annual volumes, containing papers mostly of a scientific kind, many of which contain substantial contributions to science. All this promises well for the future welfare of the colony.

WE have received part 1 of vol. ii. of the "Transactions of the Edinburgh Geological Society," embracing the period between November 1869 and April 1872. It contains a number of very interesting and valuable papers on the geology of various districts of Scotland, including one by Sir Roderick I. Murchison, on the structure of the North-West Highlands, said to be the last geological paper written by Sir Roderick.

M. COLLAS, of Paris, comments in *Les Mondes* of December 12, on M. A. Lallemande's paper on the blue colour of the atmosphere, in which it was attributed to a change of refrangibility due to a partial absorption of the chemical or ultra-violet rays. In 1870 M. Collas, in an article in *Les Mondes*, attributed the blue colour of the Lake of Geneva and other waters to the quantity of silex held in solution, which is brought down by the tributary streams from the strata through which they pass. Numerous observations since have induced him to believe that the blue colour of all the water of the globe is due to the same cause. The air everywhere always contains more or less of moisture due to evaporation from the water of the earth, the water thus evaporated always contains a greater or less quantity of extremely fine insoluble particles. Silex, says M. Collas, is one of the most common insoluble substances in nature, and through evaporation, performs the same function in the blue sky that he believes it does in the blue waters of the earth. He believes his theory is confirmed by the intense blue of southern skies, where evaporation is so much greater than in the colder north.

THE question has often been debated whether flies eat the pollen of plants, or merely carry it away accidentally on their legs and backs. The question would appear to be set at rest by a paper read at the last meeting of the Scientific Committee of the Royal Horticultural Society by Mr. A. W. Bennett, in which it is stated, as the result both of his own observations and of those of Erm. Müller, that the microscopic examination of the stomachs of Diptera belonging to the order Syrphidæ, shows them to contain large quantities of pollen-grains, especially of plants belonging to the order Compositæ. Entomologists had expressed a doubt as to whether it were possible for insects possessed only of a suctorial proboscis to devour such solid bodies as pollen-grains; but Müller believes that the transverse denticulations found in the valves at the end of the proboscis of many Diptera are especially adapted for chewing the pollen-grains, and for dividing the threads by which the grains are often bound together.

MR. FRANK BUCKLAND, writing to the *Times*, announces the birth in London, of a young rhinoceros (*R. sumatrensis*). The event took place at the Victoria Docks, on board the ship in which the mother had just arrived from Singapore; she, along with a male, having been captured by the natives of Malacca; the latter, however, died during the voyage. The young thing has been removed to the house of Mr. Rice, one of the owners of it and its mother, and we believe is getting along famously. We hope the "cockney rhinoceros," as Mr. Buckland calls it, may thrive as well as the young hippopotamus in Regent's Park, and not be permitted to cross the Atlantic, as, it seems, there is some danger of its doing, unless the Zoological Society secure it and its mother for their collection.

THE number of candidates for the ensuing matriculation examination of the University of Madras is 1,565, and the number of candidates for the first arts examination, 242.

JUDGING by the prospectuses which have fallen into our hands we cannot help concluding that the ladies of Glasgow are being well provided for in the way of lectures in the ensuing winter. No fewer than four courses are announced for their behoof. First, we have Dr. John Young, the Professor of Natural History in the University of Glasgow, with a course of sixteen lectures on his own special subject, and by means of which he proposes to give his auditors a comprehensive account of the animal kingdom, by selecting and dilating upon special and judiciously chosen types of animal structure, and their position in geological time. Next comes Mr. Edward Caird, the Professor of Moral Philosophy, with the same length of course, on the History of England, the range to be considered extending from the first period of English History to the time of Edward I., when the settlement of the principles of the Constitution was effected. This course will be open to gentlemen as well as ladies. A third University course of sixteen lectures is also announced, and will be open to gentlemen only, the lecturer being Mr. John Ferguson, M.A., Assistant to the Professor of Chemistry. These will be evening lectures, and, of course, the subject will be Elementary Chemistry. The Professors of Chemistry and Natural Philosophy in Anderson's University, apparently by way of supplementing the courses of biological and historical lectures of Profs. Yonng and Caird, have each commenced a course of twelve lectures for ladies, to be delivered in the Corporation Galleries, Dr. Thorpe taking Elementary Chemistry, and Prof. Forbes making Heat his special subject. These four courses of lectures for ladies will all be given at the same hour, but on different days, so that very zealous lady students may attend them all.

A CERTAIN Dr. A. Wolfert publishes an extraordinary article "in *Petermann's Mittheilungen*, Das Nordlicht eine weder magnetische noch electrische Erscheimung." The aurora, it appears, is neither electrical nor magnetic, but is the result of the reflection and refraction through the earth's atmosphere of the sun's rays remaining over from the summer!

AT the first ordinary meeting of the Pathological Society of Dublin, for the present session, held on Nov. 30, the President, Dr. George H. Kidd, announced that the subject chosen by the Council for competition for the gold medal, to be awarded to the best essayist in 1873, was "The Diagnosis and Pathology of Abdominal Tumours."

SCIENTIFIC SERIALS

THE *Geological Magazine* for November (No. 101) commences with a note on the forms of valleys and lake-basins in Norway by Mr. J. M. Wilson, in which the author draws attention to a connection which he has observed between the configuration of the surface of the country and the disposition of the principal planes of division of the rocks, this disposition apparently altering with the windings of the valleys. His notion appears to be that masses of rock have been torn away by glacier action until a divisional plane offering a minimum resistance to the passage of the ice was exposed.—The second article is the conclusion of Mr. Alfred Tylor's paper on the formation of deltas and on the evidence and cause of great changes in the sea-level during the glacial period, in which the author describes at considerable length the structure of the Delta of the Po (which is illustrated by sections of numerous artesian borings in Venice), and refers also to those of the Mississippi, Ganges, and Volga, in support of his views as to the peculiar curves formed by the surface of these deposits, his hypothesis of the former occurrence of a general "Pluvial" period, and his belief that during the glacial period there was an actual subsidence of the sea, due partly to its contraction by cold and partly to the abstraction of large quantities of water to form the enormous deposits of ice and snow in the colder regions. He also indicates the curves produced generally by denudation and deposition.—Mr. John Hopkinson describes some new species of Graptolites from the South of Scotland, including representatives of the genera *Dendrograptus*, *Graptolithus*, *Diplograptus*, and *Dicranograptus* from the Llandeilo rocks of Lanarkshire and Dumfriesshire; and a species of the anomalous genus *Corynoides* from the latter district. This paper is illustrated with a plate.—From Prof. Hall, of Albany, we have a note on the relations of the Middle and Upper Silurian (Clinton, Niagara, and Helderberg) rocks of the United States, written in opposition to Mr. A. H. Worthen, and in support of the generally received opinions upon this subject. The paper, although to a certain extent controversial, furnishes a useful summary of this department of American geology.—Mr. H. B. Woodward publishes a note on the Midford Sands, which he seems inclined to regard as truly transitional between the Upper Lias and the Inferior Oolite, and from this takes occasion to hint that the Keuper, Lias, and Oolites may be looked upon as one conformable series, the divisions or stages of which are to a certain extent arbitrary. The number concludes with the completion of Prof. Nordenskiöld's account of his expedition to Greenland in 1870.

Poggendorff's Annalen der Physik und Chemie, No. 9, 1872, contains two mineralogical papers, one by Vom Rath, on Anorthite, being a crystallographic study of the Naples collection; and the other by Dr. Lasaulx on Micromineralogy (second of a series), and treating of the metamorphic phenomena in protogine, granite, &c.—W. Stille discusses mathematically the theory of the boomerang's motion; and a paper by F. Braun treats of the influence of rigidity, fixture, and amplitude on the vibrations of strings; figures being given, showing the traces made by a feather (attached to the string), on a smoke-blackened cylinder, under varying conditions of the kind mentioned. F. B. Hofmann describes the spectral phenomena of phosphuretted hydrogen and of ammonia, and his paper is connected with one by F. Hoppe-Seyler on the production of light by atomic motions. Two of the Royal Society's papers, and one or two articles on chemical subjects make up the rest of this number.

SOCIETIES AND ACADEMIES

LONDON

Royal Society, Dec. 12.—"On the Structural Composition of Urinary Calculi." By H. Vandyke Carter, M.D.

"A Contribution to the Knowledge of Hæmoglobin." By E. Ray Lankester. According to the author the distribution of hæmoglobin may be summarised as follows:—

1. In special corpuscles.
    a. In the blood of all vertebrates, excepting *Leptocephalus* and *Amphioxus* (?).
    b. In the perivisceral fluid of some species of *Glycera*, of *Capitella*, and *Phoronis*.
    c. In the blood of *Solen legumen*.
2. Diffused in a vascular or ambient liquid.
    a. In the peculiar vascular system of the Chætopodous